Communicating Microplastics Science through Education

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Microplastics: Invisible but Everywhere

Microplastics are present in air, water and soil, posing risks to ecosystems and human health. Despite increasing scientific knowledge, awareness, especially among youth, is limited.

At the Faculty of Environmental Protection, we aim to bridge this gap through science communication and environmental education at all school levels. Our goal is to help young people understand the sources and impacts of microplastics and to encourage sustainable behaviors that reduce plastic pollution.

Micro(µ)School

Program developed as part of four Erasmus+ projects (MicPlaPROB, EDU4PlastiCircular, GreenGate, GreenGate2) offering interdisciplinary workshops for primary, secondary, and tertiary students.

The workshops use digital tools, interactive activities, and real-life examples (e.g., microplastics in textiles and cosmetics) to actively engage youth and educators. The program aligns with EU guidelines, including the European Green Deal and the Council Recommendation on Learning for the Green Transition.

Workshop Themes

Microplastics in Textiles

Participants investigate microfibers released from synthetic garments, explore their environmental impact, and try to recognize natural and synthetic fabrics through a blind test, promoting reflection on personal choices and sustainable alternatives.


Microplastics in Cosmetics

Participants identify microplastics in everyday cosmetics, examine their environmental and health effects, and create their own products from natural ingredients, encouraging responsible consumption and creativity.


Microplastics in the Environment

Participants explore how microplastics move through air, water, and soil, study their effects on living organisms, and perform hands-on tasks like river sampling and microscope analysis to build environmental awareness.


Results

Over a three-year period, we organized 21 educational events reaching more than 1,000 young people of different educational levels within the Micro(µ)School program.

The largest share of participants were elementary school students (44%), who were especially active in the textiles workshop. Secondary school students (40%) were most engaged in environment-focused activities, while higher education students (16%) participated more evenly across all three themes (Figure 1). Through online courses, video production, field excursions, interactive apps, and hands-on workshops, participants gained knowledge, developed green and digital competences, and became actively involved in proposing innovative local solutions. The activities fostered environmental awareness and community engagement, highlighting the real-world impact of microplastics pollution.

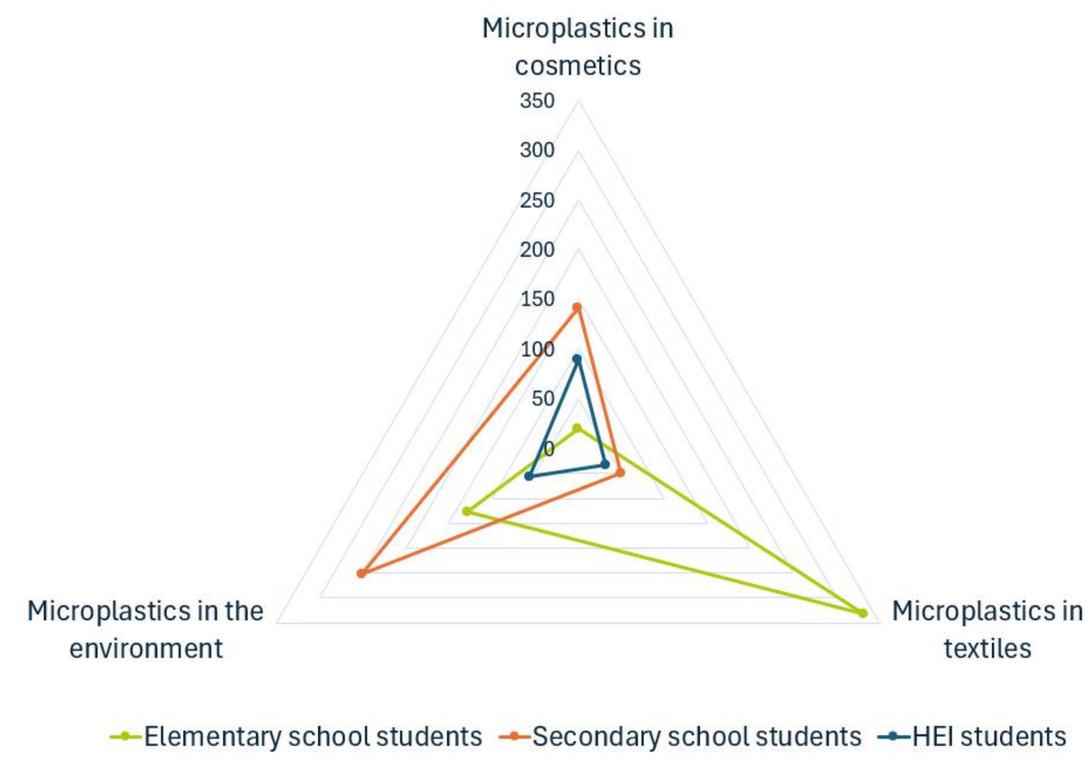

Figure 1. Participation in Micro(µ)School workshops by educational level and thematic focus.

Conclusion

Today's youth are among the first to understand the microplastics problem—and among the last with the power to act.

The Micro(µ)School program demonstrates how education can combine science, innovation, and green skills to engage young people in meaningful learning and drive the transition to a more sustainable future.

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